

科目名稱	應用力學	類組代碼	D37
		科目碼	D3791

※本項考試依簡章規定所有考科均「不可」使用計算機。

本科試題共計 2 頁

1. Find the force (kN) in each cable (BC, AC, DC, and EC) needed to support the 1000-kg mass ($g=9.8 \text{ m/s}^2$). (本題占 25%, each cable force 分數占: 6.25%)

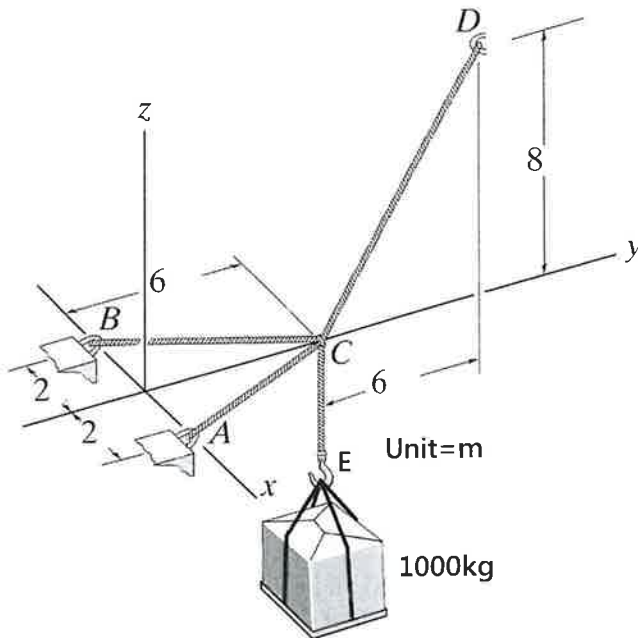


Fig.1 For problem 1.

2. If the roller at B can sustain a maximum load of 9 kN, determine the largest magnitude of each of the three forces F that can be supported by the truss. Then, find the member force of AB.

(本題占 25% , Force F(12.5%), member force of AB(12.5%))

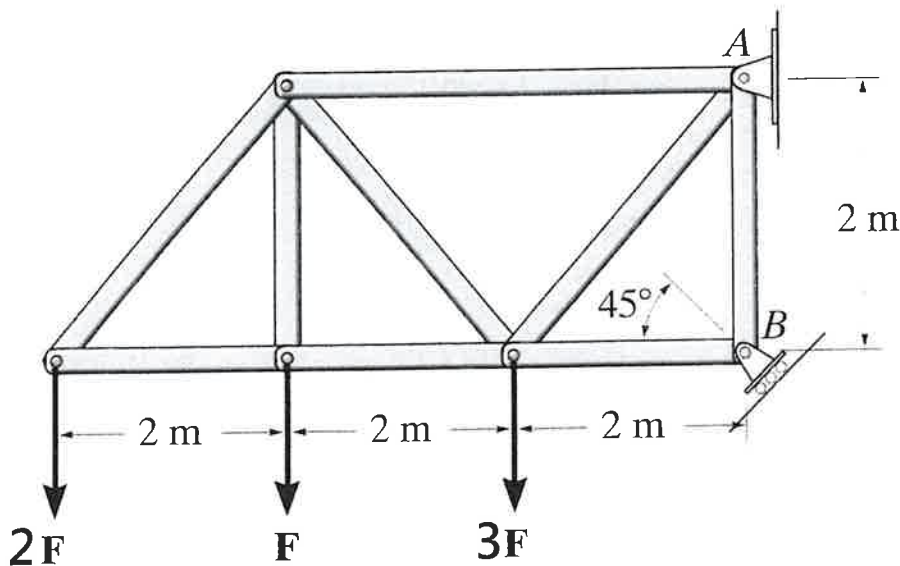


Fig.2 For problem 2.

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3. Draw the shear and moment diagrams for the beam.
 (本題占 25%, shear diagram(12.5%), moment diagram(12.5%))

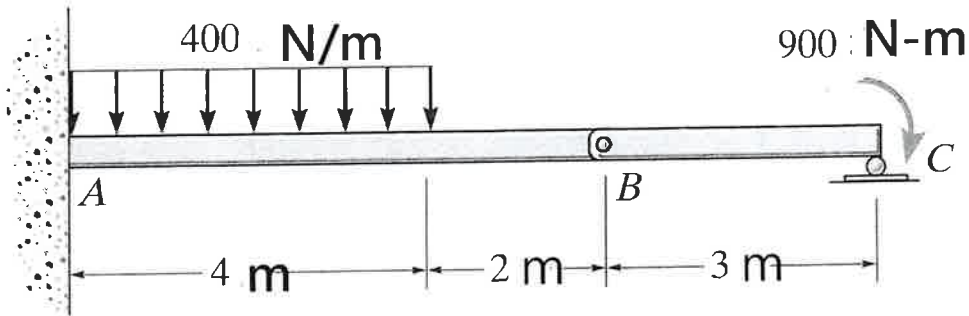


Fig.3 For problem 3.

4. The members of the mechanism are pin connected. If a vertical force of 800 N acts at A, determine the angle θ for equilibrium. The spring is unstretched when $\theta = 0^\circ$. Neglect the mass of the links.
 (本題占 25%)

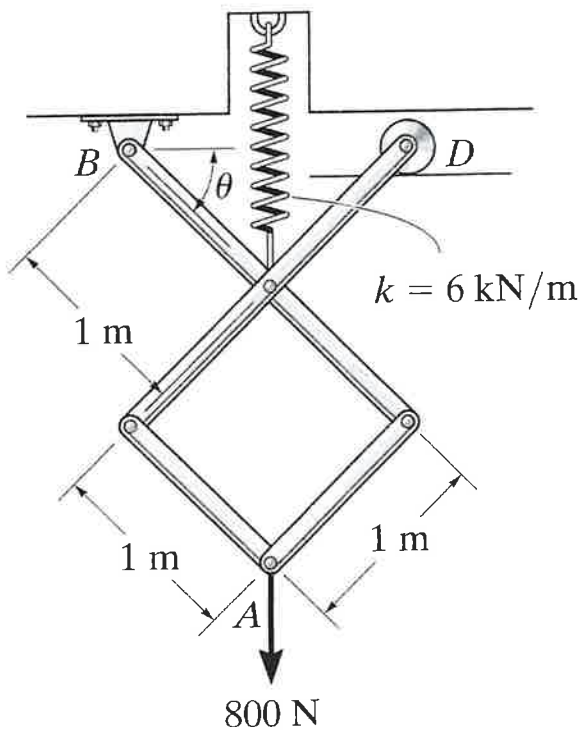


Fig.4 For problem 4.